

CLAIMS:

1. (Original) A method for predistorting an input signal, comprising:
predistorting said input signal based on one or more static coefficients
5 representative of a non-linear distortion characteristic of an amplifier; and
processing said input signal based on a non-linear gain parameter that reduces an
error metric between said input signal and a feedback signal following said amplifier.
2. (Original) The method of claim 1, wherein said non-linear gain parameter is
10 adapted when said input voltage is above a threshold input voltage.
3. (Original) The method of claim 2, wherein said threshold input voltage identifies
a compression zone.
- 15 4. (Original) The method of claim 1, wherein said nonlinear gain parameter adapts
an amount of nonlinearity introduced by said predistorting step.
5. (Original) The method of claim 1, wherein said error metric comprises a squared
difference between said input signal and said feedback signal following said amplifier.
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6. (Original) The method of claim 1, further comprising the step of processing said
input signal based on a feedback gain parameter.
7. (Original) The method of claim 6, wherein said feedback gain parameter
25 compensates for a small-signal gain of a feedback loop that generates said feedback signal.
8. (Original) The method of claim 6, wherein said small-signal gain is approximately
unity.

9. (Original) The method of claim 6, wherein said small-signal gain is a difference between said input signal and said feedback signal.

10. (Original) The method of claim 1, further comprising the step of applying said
5 predistorted signal to said amplifier.

11. (Original) The method of claim 1, wherein said step of processing said input
signal further comprises the step of multiplying said input signal by said non-linear gain
parameter.

10 12. (Original) The method of claim 11, wherein said step of processing said input
signal further comprises the step of dividing said input signal by said non-linear gain parameter.

13. (Original) The method of claim 1, wherein said non-linear distortion characteristic
15 comprises an AM/AM characteristic.

14. (Original) The method of claim 1, wherein said non-linear distortion characteristic
comprises an AM/PM characteristic.

20 15. (Original) The method of claim 1, further comprising the step of digitizing said
input signal prior to said predistorting step.

16. (Original) A predistorter that processes an input signal, comprising:
means for predistorting said input signal based on one or more static coefficients
25 representative of a non-linear distortion characteristic of an amplifier; and
means for processing said input signal based on a non-linear gain parameter that
reduces an error metric between said input signal and a feedback signal following said amplifier.

17. (Original) The predistorter of claim 16, wherein said means for processing step is only performed when said input voltage is above a threshold input voltage.

18. (Original) The predistorter of claim 16, wherein said nonlinear gain parameter
5 adapts an amount of nonlinearity introduced by said predistorter.

19. (Original) The predistorter of claim 16, wherein said error metric is a squared difference between said input signal and said feedback signal following said amplifier.

20. (Original) The predistorter of claim 16, further comprising the step of processing
10 said input signal based on a feedback gain parameter that compensates for a small-signal gain of a feedback loop that generates said feedback signal.

21. (Original) The predistorter of claim 16, further comprising a multiplier for
15 multiplying said input signal by said non-linear gain parameter.

22. (Original) The predistorter of claim 21, further comprising a divider for dividing
said input signal by said non-linear gain parameter.

23. (Original) The predistorter of claim 16, wherein said static coefficients are
20 implemented using a look-up table.

24. (Original) The predistorter of claim 16, wherein said static coefficients are
implemented using one or more multipliers.

25. (Original) An integrated circuit, comprising:
a predistorter that processes an input signal based on one or more static
coefficients representative of a non-linear distortion characteristic of an amplifier and a non-
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linear gain parameter that reduces an error metric between said input signal and a feedback signal following said amplifier; and

an adaptive circuit that adjusts said non-linear gain parameter based on said error metric.